IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

Application No.	:	10/040,100
Applicants	:	Paul L. Master et al.
Filed	:	January 4, 2002
Title	:	APPARATUS AND METHOD FOR ADAPTIVE MULTIMEDIA RECEPTION AND TRANSMISSION IN COMMUNICATION ENVIRONMENTS
TC/A.U.	:	2151
Examiner	:	Nghi V. Tran
Docket No.	:	046301-006000
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Commissioner for Patents
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CORRECTED APPEAL BRIEF PURSUANT TO 37 C.F.R. § 41.37

Dear Sir:

This Corrected Appeal Brief is filed in response to the August 10, 2007 Notice of Non-Compliant Brief. The Corrected Appeal Brief supports Appellants' appeal to the Board of Patent Appeals and Interferences ("Board") from the final rejection of claims 1-22 and 39-67.

The Corrected Appeal Brief is being submitted in a timely fashion as a petition for one month extension is enclosed making the due date October 10 2007. The Corrected Appeal Brief adds identification and mapping for independent claim 60 on page 7 of this paper to correct the defects noted in the Notice of Non-Compliant Brief.

I. REAL PARTY IN INTEREST

The real party in interest is QST Holdings LLC, having a place of business at 6640 Via Del Oro, Suite 120, San Jose, California 95119.

II. RELATED APPEALS AND INTERFERENCES

There are no other appeals or interferences that will directly affect, be directly affected by, or have a bearing on the Board of Patent Appeals and Interferences in the present appeal.

III. STATUS OF CLAIMS

Claims 1-22 and 39-67 are currently pending and rejected in the above-referenced application and are the subject of the present appeal. No claims have been allowed.

IV. STATUS OF AMENDMENTS

A February 9, 2007 Final Office Action rejected all the pending claims. (Exhibit B). The claims are as presented in a November 5, 2006 Amendment and Response to Office Action. (Exhibit C). An interview was conducted between the undersigned and the Examiner on May 1, 2007, but no agreement was reached as to the allowability of the claims. An interview summary submitted by Applicant is attached as Exhibit E.

V. SUMMARY OF CLAIMED SUBJECT MATTER

Claims 1-22 and 39-67 are directed to the embodiments shown in FIGs. 1-4. Independent claim 1 is generally directed toward an apparatus 60 for adaptive multimedia transmission and reception. *See* U.S. Publ. No. 2003/0140123[1] (Exhibit A, ¶¶ 23 and 36, Fig. 2, Specification, p. 9, ll. 21-24, p. 11, ll. 15-22). The apparatus 60 includes a network interface 62. (Ex. A, ¶ 32, Fig. 2, Specification, p. 9, ll. 19-21). The apparatus 60 has a plurality of heterogeneous computational elements 250. (Ex. A, ¶ 51, Figs. 4-5, Specification, p. 17, ll. 20-24). A first computational element of the heterogeneous computational elements 250 has a first fixed architecture (e.g., multiplication) and a second computational element has a second, different fixed architecture (e.g., correlation). (Exhibit A, ¶¶ 53, 62 and 63, Fig. 4, Specification, p. 18, ll. 1-8, p. 23, ll. 22-26, p. 24, ll. 3-9). An interconnection network (collectively networks 210, 220 and 240) is coupled to the network interface 62 and to the plurality of heterogeneous computational elements 250. (Exhibit A, ¶ 49, Fig. 4, Specification, p. 16, ll. 6-12). The interconnection network is adapted, in response to first configuration information, to configure a first plurality of input and output data connections among the heterogeneous computational elements 250 for a first media functional mode such as an acquisition mode. (Exhibit A, ¶¶ 55, 58, Fig. 3, Specification, p. 19, ll. 8-11, p. 20, l. 25 – p. 21, l. 7). The interconnection network is further adapted, in response to second configuration information, to configure a second plurality of input and output data connections among the heterogeneous computational elements 250 for a second, different media functional mode such as traffic mode. (Exhibit A, ¶¶ 55, 58, Fig. 3,

[1] The Publication for the application at issue is being attached for convenience as Exhibit A. Applicant is also providing the corresponding specification page and line number in this and following sections.

Specification, p. 19, ll. 8-11, p. 20, l. 25 – p. 21, l. 7). The media functional modes include an acquisition mode (70E and 70F) and a traffic mode used in different communication protocols such as CDMA and GSM. (Exhibit A, ¶¶ 36, 38 and 39, Fig. 2, Specification, p. 11, ll. 15-22, p. 12, ll. 3-6, p. 12, ll. 12-16).

Independent claim 39 is generally directed toward an adaptive integrated circuit (adaptive computing engine 100) shown generally in Figure 3. (Ex. A, ¶ 24, Fig. 3, Specification, p. 5, ll. 29-30). The adaptive integrated circuit 100 includes a memory 61 adapted to store configuration information. (Ex. A, ¶ 33, Fig. 2, Specification, p. 9, ll. 19-21). The adaptive integrated circuit 100 includes a plurality of fixed and differing computational elements 250. (Ex. A, ¶ 51, Figs. 4-5, Specification, p. 17, ll. 20-24). An interconnection network (collectively networks 210, 220 and 240) is coupled to the memory 61 and to the fixed and differing computational elements 250. (Exhibit A, ¶¶ 53, 62 and 63, Fig. 4, Specification, p. 18, ll. 1-8, p. 23, ll. 22-26, p. 24, ll. 3-9). The interconnection network is adapted, in response to configuration information, to configure a plurality of data input, data output and control communication paths among the fixed and differing computational elements 250 for a plurality of media functional modes. (Exhibit A, ¶¶ 55, 58, Fig. 3, Specification, p. 19, ll. 3-8, p. 20, l. 25 – p. 21, l.7). The media functional modes include an acquisition mode (70E and 70F) and a traffic mode. (Exhibit A, ¶¶ 36, 38 and 39, Fig. 2, Specification, p. 11, ll. 15-22, p. 12, ll. 3-6, p. 12, ll. 12-16).

Independent claim 60 is generally directed toward a mobile communication apparatus for wireless communication within a wireless network 43 as shown in Fig. 1. (Ex. A, ¶¶ 25, 28, Fig. 1, Specification, p. 6, ll. 13-26, p. 7, ll. 23-26). The apparatus includes a network interface 62 for wireless communication with a base station transceiver 25. (Ex. A, ¶¶ 32, 33, 42 Fig. 2, Specification, p. 9, ll. 19-21, p. 10, ll. 1-10, p. 13, ll. 15-19). The apparatus includes a memory

61 adapted to store configuration information. (Ex. A, ¶ 33, Fig. 2, Specification, p. 9, ll. 19-21). The apparatus includes a plurality of fixed and differing computational elements 250. (Ex. A, ¶ 51, Figs. 4-5, Specification, p. 17, ll. 20-24). An interconnection network (collectively networks 210, 220 and 240) is coupled to the memory 61, the network interface 62 and the plurality of fixed and differing computational elements 250. (Exhibit A, ¶¶ 53, 62 and 63, Fig. 4, Specification, p. 18, ll. 1-8, p. 23, ll. 22-26, p. 24, ll. 3-9). The interconnection network is adapted, in response to configuration information, to configure a plurality of data input, data output and control communication paths among the fixed and differing computational elements 250 for media functional modes. (Exhibit A, ¶¶ 55, 58, Fig. 3, Specification, p. 19, ll. 3-8, p. 20, l. 25 – p. 21, l.7). The media functional modes include an acquisition mode (70E and 70F) and a traffic mode. (Exhibit A, ¶¶ 36, 38 and 39, Fig. 2, Specification, p. 11, ll. 15-22, p. 12, ll. 3-6, p. 12, ll. 12-16).

VI. GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL

1) Whether claims 1-22 and 39-67 were improperly rejected on the basis of non-statutory double patenting over claims 1-50 of U.S. Patent No. 6,618,434 ("Heidari-Bateni" attached as Exhibit F) due to: a) the lack of a showing of all elements in the present claims; and b) a lack of analysis of the similarities and differences between the reference and the present claims as required by the MPEP.

2) Whether claims 1-6, 8-11, 14-16, 20-22, 39-44, 46-52 and 59-64 were improperly rejected as obvious under 35 U.S.C. § 103(a) over U.S. Publication No. 2001/0003191 ("Kovacs" attached as Exhibit G) in view of U.S. Patent No. 5,583,891 ("Eriksson" attached as Exhibit H).

Claims 1-22 and 39-67 stand rejected on the basis of non-statutory double patenting over claims 1-50 of Heidari-Bateni (Exhibit F). Claims 1-6, 8-11, 14-16, 20-22, 39-44, 46-52 and 59-64 stand rejected under 35 U.S.C. § 103(a) over Kovacs (Exhibit G) in view of Eriksson (Exhibit H). Claims 7, 12-13, 17-19, 45, 53-58 and 65-57 stand rejected under 35 U.S.C. § 103(a) over Kovacs (Exhibit G) in view of Eriksson (Exhibit H) and further in view of U.S. Publication No. 2003/0026242 ("Jokinen" attached as Exhibit I).

With regard to claims 1 and 39, the Final Office Action has asserted that Kovacs discloses a plurality of heterogeneous computation elements having a first computational element having a first fixed architecture and a second computation element having a second, different fixed architecture, citing paragraph 36 of Kovacs. (Ex. B, pp. 5-6). The Final Office acknowledged that Kovacs:

> does not explicitly show an interconnection network couple[d] [sic] to the network interface and to the plurality of heterogeneous computation elements, the interconnection network adapted, in response to first configuration information, to configure a first

> plurality of input and output data connections among the plurality of heterogeneous computational elements for a first media functional mode of a plurality of media functional modes, and the interconnection network further adapted, in response to second configuration information, to configure a second plurality of input and output data connections among the plurality of heterogeneous computational elements for a second, different media functional mode of the plurality of media functional modes, the plurality of media functional modes comprising an acquisition mode and a traffic mode.

(Ex. B, p. 6). During the May 1, 2007 interview, the Examiner clarified that Kovacs disclosed all these elements except for "the plurality of media functional modes comprising an acquisition mode and a traffic mode." (Ex. E).

The Final Office Action cited Eriksson as disclosing an interconnection network coupled to a network interface and a plurality of heterogeneous computational elements citing Col. 4, l. 47 – Col. 5, l. 11. (Ex. B, p. 6). The Final Office Action further cited Eriksson as disclosing configuring a first plurality of input and output data via input and output signals shown in Figures 4a and 4b. (Ex. B, p. 6). The Final Office Action also asserted that Eriksson discloses an acquisition mode citing Col. 13, l. 20 – Col. 14, l. 42 and a traffic mode citing Col. 8, l. 41-Col. 9, l. 49. (Ex. B, p. 7). The Final Office Action noted it would have been obvious to modify Kovacs in view of Eriksson by configuring a first and second plurality of input and output data connections to change to a second media functional mode including a traffic mode and an acquisition mode. (Ex. B, p. 7).

VII. ARGUMENT: THE PENDING CLAIMS ARE ALLOWABLE OVER ALL OF THE CITED REFERENCES

For the Board's convenience, claims 1-22 and 39-67 are one group that will stand or fall together with regard to the double patenting rejection. Claims 1-22 and 39-67 are one group that will stand or fall together with regard to the obviousness rejection based on Kovacs and Eriksson.

A. CLAIMS 1-22 AND 29-67 ARE IMPROPERLY REJECTED UNDER NON-STATUTORY DOUBLE PATENTING IN VIEW OF HEIDARI-BATENI SINCE NONE OF THE REQUIREMENTS FOR DOUBLE PATENTING ARE MET

1. The Advisory Action Fails To Properly State A Double Patenting Rejection In Compliance With The MPEP

Section 904(II)(B)(1) of the MPEP relating to double patenting states:

> Any obviousness-type double patenting rejection should make clear:
>
> (A) The differences between the inventions defined by the conflicting claims - a claim in the patent compared to a claim in the application; and
>
> (B) The reasons why a person of ordinary skill in the art would conclude that the invention defined in the claim at issue would have been an obvious variation of the invention defined in a claim in the patent.

The Final Office Action merely listed claim 1 of the Heidari-Bateni patent with certain elements underlined and claim 1 of the pending application with certain elements underlined. The Final Office Action asserts, without any support except for the claim listing, that claim 1 of Heidari-Bateni rendered claims 1-22 and 39-67 obvious. (Ex. B, pp. 3-4). The recitation of the double patenting rejection in the Final Office Action does not meet the criteria for a proper double patenting rejection set forth in the MPEP section cited above and as such should be withdrawn.

There is no discussion in the Final Office Action whatsoever regarding the differences between the inventions defined by the conflicting claims other than underlining certain parts of the claim language. Even accepting that listing the claims is acceptable, there is no discussion on how claim 1 of the Heidari-Bateni patent differs from pending claims. The lack of these elements in the Final Office Action does not meet the requirements of part A of MPEP Section 904(II)(B)(1).

Further, the Final Office Action has not provided any reason why a person of ordinary skill in the art would conclude that the invention defined in the claim at issue would have been an obvious variation of the invention defined in a claim in the patent. The simple underlining of claims and otherwise unsupported assertion that the conflicting claims "are not patentably distinct from each other" (Ex. B, pp. 3-4) does not provide the required reasons required by part B of MPEP Section 904(II)(B)(1) either.

2. The Interconnection Network Adapted To Configure Input And Output Data Connection Elements Are Neither Anticipated Nor Rendered Obvious By Claim 1 Of The Heidari-Bateni Patent

The pending claims all require an interconnection network which is adapted to configure the input and output data connections. Nothing in the cited claim 1 of Heidari-Bateni suggests or discloses using an interconnection network to configure data connections. Claim 1 of Heidari-Bateni instead discloses a multimode processor which is self configured to change functional modes. The Final Office Action presumably underlined "a multimode processor coupled to the plurality of adaptive multimode rake fingers" in claim 1 of Heidari-Bateni as the equivalent element of the interconnection network in the pending claims. (Ex. B, p. 4). A multimode processor is not the same element as an interconnection network. A multimode processor is a processing unit having several different modes such as analog-to-digital conversion, filtering,

frequency processing and baseband signaling which are provided to the rake fingers. (Ex. F, Col. 5, ll. 23-28. In contrast an interconnection network is a series of connections between the heterogeneous computational elements that reconfigures connections between the computational elements. Thus, a multimode processor actually performs computing functions (multimodes) while the interconnection network does not perform any computing function in and of itself, as it simply changes connections between the computational elements.

The Final Office Action simply asserts that the claims of the instant "application is overlapping with the limitation of claims" of the Heidari-Bateni reference. (Ex. B, p. 3). There is no further analysis why one of skill in the art would interpret an interconnection network would be an obvious variation of a multimode processor. Indeed, one of ordinary skill would not equate a multimode processor that performs different computational functions with a network that merely reconfigures connections.

In summary, the double patenting rejection is procedurally improper. Further, the pending claims differ significantly from Heidari-Bateni. As such, this Board should order the withdrawal of double patenting rejections based on Heidari-Bateni.

B. CLAIMS 1-22 AND 39-67 ARE IMPROPERLY REJECTED UNDER 35 U.S.C. 103 BASED ON THE COMBINATION OF KOVACS AND ERIKSSON BECAUSE NEITHER REFERENCE DISCLOSES AN INTERCONNECTION NETWORK

The Final Office Action has failed to meet the burden of establishing a *prima facie* case of obviousness in relation to the pending claims by asserting the combination of Kovacs with Eriksson. This combination fails to anticipate the elements of:

a) "an interconnection network coupled to the network interface and to the plurality of heterogeneous computational elements,"

b) "the interconnection network adapted, in response to first configuration information, to configure a first plurality of input and output data connections among the plurality of heterogeneous computational elements for a first media functional mode of a plurality of media functional modes"

c) "the interconnection network further adapted, in response to second configuration information, to configure a second plurality of input and output data connections among the plurality of heterogeneous computational elements for a second, different media functional mode of the plurality of media functional modes"

as required in claim 1. Similar elements including the interconnection network are in claim 39.

The present claims require that the heterogeneous computational units perform different functions by having actual data interconnections changed by the interconnection network which configures the data inputs and output connections. The change in interconnections allows the heterogeneous computational units to be combined to perform different functions. This differs from fixed multi-functional circuits which may have different modes controlled by control data, but for which the actual data inputs and outputs remain interconnected the same way regardless of the function of the circuit. The flexibility of such fixed multi-functional devices is inherently limited by what functions they were designed for. In addition, such general processing is slowed because of relatively inefficient software running the desired functions. There is no need for the claimed interconnection network on such a fixed device as software is simply directly copied into memory and a bus structure allows a multi-functional circuit to perform one of the predesigned functions.

1. Neither Kovacs Nor Eriksson Teach An Interconnection Network Within An Adaptable Circuit.

a. The Examiner's Waffling On What Kovacs Discloses

Initially, the Final Office conceded that Kovacs:

> "does not explicitly show an interconnection network couple[d] [sic] to the network interface and to the plurality of heterogeneous computation elements, the interconnection network adapted, in response to first configuration information, to configure a first plurality of input and output data connections among the plurality of heterogeneous computational elements for a first media functional mode of a plurality of media functional modes, and the interconnection network further adapted, in response to second configuration information, to configure a second plurality of input and output data connections among the plurality of heterogeneous computational elements for a second, different media functional mode of the plurality of media functional modes, the plurality of media functional modes comprising an acquisition mode and a traffic mode."

(Ex. B, p. 6). During the May 1, 2007 Interview, the Examiner attempted to clarify this position by indicating that Kovacs did disclose an interconnection network. However, during the May 1, 2007 Interview, the Examiner also conceded that Kovacs only shows an interconnection network that linked multi-media devices such as the Mobile Devices A-C in Figure 1 together and Kovacs does not show an interconnection network within the device itself. The Examiner was unable to and still cannot point to any teaching in Kovacs of an interconnection network on the devices themselves.

The lack of an interconnection network is apparent as Kovacs is fundamentally geared toward programming fixed hardware devices to adapt between different network protocols for application in a mobile ad-hoc network. (Ex. G, ¶ 24). The hardware devices themselves such as Mobile Devices A-C in Figure 1 do not have an interconnection network coupled to heterogeneous computing units. Kovacs thus represents known prior art which, rather than reconfiguring interconnections between heterogeneous computational units to change functions, uses software to direct processors to perform operations while maintaining the same data inputs

and outputs to such processors. The hardware devices in Kovacs may have different functions such as receiving signals in different network protocols. (Ex. G, ¶ 20). However this functionality is programmed by downloading software instructions to a protocol mapping manager sub-unit 54 of an ad-hoc computer manager unit 52 and not by reconfiguring data interconnections via an internal interconnection network in the device itself. (Ex. G, ¶ 92). According to Kovacs, the software unit implements the functionality to change network protocols by a protocol stack which is downloaded from a server. (Ex. G, ¶ 92).

b. Kovacs Only Relates To Networks Of Devices, Not Interconnection Networks Within A Device

The only support that the Examiner has cited for Kovacs disclosing the elements of claims 1 and 39 is paragraph 36. (Ex. B, p. 6). However, paragraph 36 in its entirety simply states that:

> "The specific advantages of the present invention over the prior art are that the present invention offers a unified set of mechanisms and tools necessary for allowing (mobile) multimedia applications to effectively use any type of network model, and particularly mobile ad-hoc networks, by integrating the state of the art technologies and providing a set of application programming interfaces. By using them, (mobile) multimedia application developers can thus rapidly and concisely create (mobile) multimedia applications operating in any network environment. Further, the present invention offers a seemless view of heterogeneous multi-vendor networks, as logical and physical mobile ad-hoc networks. Further, the present invention allows to create automatically a customised graphical user interface for inspecting, controlling and using the network and available network resources. Additionally, the present invention leaves open the possibility to create entry gateway servers for achieving better performance in providing mobile users with customisable access to the network environment. The present invention further offers (mobile) multimedia applications a socket-based application programming interface unit for quality of service-based adaptive routing. Further, the present invention allows easy, dynamic communications protocol stack upgrade on demand. Additionally, new base technologies can be easily integrated in the concept of the present invention." (emphasis added)

Paragraph 36 actually makes clear that Kovacs does not disclose a device with internal heterogeneous computational elements connected via an interconnection network. The

heterogeneity of Kovacs refers to different ad-hoc mobile networks and not the actual devices which may be parts of the ad-hoc networks. In contrast, the present claims relate to components, such as heterogeneous computational elements and interconnection networks, within the actual devices which make up the network.

Further paragraph 36 supports the fact that Kovacs uses software to institute a change in configuration. The "dynamic communications protocol stack upgrade" is a software program which runs on a fixed hardware or integrated circuit to change the ability to operate in different network protocols. (See also Ex. G, ¶ 92). This is exactly opposite of the present claims which actually changes the hardware functions via changing physical interconnections in the interconnection network. It is clear that paragraph 36 does not disclose an interconnection network that reconfigures the connections between input and output data connections. Moreover, the "interface units" in Kovacs are not heterogeneous computational units that perform different media functions as required in these claims.

c. Eriksson Does Not Disclose Either A Configurable Interconnection Network Or Media Functions Enabled By Changing Data Inputs and Outputs

The Examiner has cited Eriksson as disclosing an interconnection network citing Col. 4, l. 47 to Col 5, l. 11 and Figs 4a and 4b. (Ex. B, pp. 6-7). The cited section relates to an automatic gain control (AGC) 60 with four inputs which may be adjusted according to AGC coefficients and state parameter values stored in a memory table as shown in Fig. 8. (Ex. H). Eriksson discloses an automatic gain control adjustment circuit 60 which allows changes rapidly from preloaded values to allow different gains when the communication device switches from a first to a second frequency. (Ex. H, Col. 8, ll. 20-22). The control data changes depending on the desired mode, but the input and output interconnections to and from the AGC 60 are not

reconfigured. Only the data (control bits) to the control inputs of the AGC 60 are changed. (Ex. H, Fig. 3). Eriksson changes control data (i.e. coefficient data) for a signal detector and feed back control circuit to control the AGC 60 to perform different functions but does not reconfigure the data inputs themselves or the data outputs. (Ex. H, Fig. 8).

2. The Pending Claims Are Allowable Because They Require An Interconnection Network Configuring Input And Output Connections

Claim 1 requires "an interconnection network coupled to the network interface and to the plurality of heterogeneous computational elements, the interconnection network adapted, in response to first configuration information, to configure a first plurality of input and output data connections among the plurality of heterogeneous computational elements for a first media functional mode of a plurality of media functional modes, and the interconnection network further adapted, in response to second configuration information, to configure a second plurality of input and output data connections among the plurality of heterogeneous computational elements for a second, different media functional mode of the plurality of media functional modes." Similarly, claim 39 requires "an interconnection network coupled to the memory and to the plurality of fixed and differing computational elements, the interconnection network adapted, in response to configuration information, to configure a plurality of data input, data output and control communication paths among the plurality of fixed and differing computational elements for a plurality of media functional modes."

Neither Kovacs nor Eriksson separately or in combination disclose an interconnection network that configures data inputs and outputs as in claim 1 or the communication paths as in claim 39. Fundamentally, both Kovacs and Eriksson relate to the use of software to cause hardware devices to perform different functions. This falls under what the specification describes as programming an existing IC structure or function as opposed to adding or changing

actual IC functionality. (Ex. A, ¶ 49, Specification, p. 16, ll. 12-15). Although Kovacs and Eriksson allow different functions, the inputs, outputs and communication paths between computational units within the respective devices remain the same. As explained above, the network in Kovacs is inclusive of communication devices and does not reconfigure computational units within the devices themselves. In fact, Kovacs teaches away from changing physical interconnections, because the functions are changed by altering control data via stack protocols through fixed interconnections. Kovacs uses programmable protocol stacks to change different network devices to adapt to different network protocols.

Similarly, as shown in Figures 4a, 4b and 8, Eriksson changes control data (i.e., the four inputs to the AGC), but does not change the interconnections to and from the AGC. (Ex. H). Eriksson changes the values to control the AGC 60 in order to change a mode of operation. This disclosure also falls under what Applicant's specification describes as programming an existing IC structure or function as opposed to adding or changing actual IC functionality. (Ex. A, ¶ 49, Specification, p. 16, ll. 12-15).

In summary, neither of these references discloses configuring computational elements by changing input and output data connections which is required by independent claims 1 and 39. The remaining claims depend from either independent claim 1 or independent claim 39 and are similarly allowable.

VIII. CLAIMS APPENDIX

A clean copy of the claims 1-22 and 39-67 involved in the appeal is included in the Claims Appendix.

IX. EVIDENCE APPENDIX

A copy of the evidence relied upon by the appellant is included in the Evidence Appendix and is herein referenced. A list of evidence and where each was entered in the record is included in the Index to the Appendices.

X. RELATED PROCEEDINGS APPENDIX

As there are no related proceedings, no information is provided in the Related Proceedings Appendix.

XI. CONCLUSION

For at least the foregoing reasons, the final rejection of appealed claims 1-22 and 39-67 set forth in the Final Office Action mailed February 9, 2007, should be reversed.

Respectfully submitted,

Date: October 10, 2007

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APPENDICES

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CLAIM APPENDIX

CLAIMS APPENDIX
CLEAN COPY OF CLAIMS ON APPEAL

1. An apparatus for adaptive multimedia transmission and reception, the apparatus comprising:

a network interface;

a plurality of heterogeneous computational elements, a first computational element of the plurality of heterogeneous computational elements having a first fixed architecture and a second computational element of the plurality of heterogeneous computational elements having a second, different fixed architecture; and

an interconnection network coupled to the network interface and to the plurality of heterogeneous computational elements, the interconnection network adapted, in response to first configuration information, to configure a first plurality of input and output data connections among the plurality of heterogeneous computational elements for a first media functional mode of a plurality of media functional modes, and the interconnection network further adapted, in response to second configuration information, to configure a second plurality of input and output data connections among the plurality of heterogeneous computational elements for a second, different media functional mode of the plurality of media functional modes, the plurality of media functional modes comprising an acquisition mode and a traffic mode.

2. The apparatus of claim 1, wherein the plurality of media functional modes further comprises an idle mode.

3. The apparatus of claim 1, wherein the acquisition mode includes a channel acquisition mode and a control processing mode.

4. The apparatus of claim 1, wherein the traffic mode includes a voice reception mode, a voice transmission mode, and a control processing mode.

5. The apparatus of claim 1, wherein the traffic mode includes a data reception mode, a data transmission mode, a data processing mode, and a control processing mode.

6. The apparatus of claim 1, wherein the traffic mode includes a media reception mode, a media transmission mode, a media processing mode, and a control processing mode.

7. The apparatus of claim 4, wherein the control processing mode includes processing of a plurality of GSM control channels, the plurality of GSM control channels

including a broadcast control channel (BCCH), a frequency-correction channel, a synchronization channel (SCH), a plurality of common control channels (CCCH), a slow associated control channels (SACCH), and a fast associated control channel (FACCH).

8. The apparatus of claim 1, wherein the interconnection network is further adapted to configure a third plurality of input and output data connections among the plurality of heterogeneous computational elements for media reception on a plurality of frequencies.

9. The apparatus of claim 1, wherein the interconnection network is further adapted to configure a third plurality of input and output data connections among the plurality of heterogeneous computational elements for media reception in a plurality of time division multiple access (TDMA) time slots.

10. The apparatus of claim 1, wherein the interconnection network is further adapted to configure a third plurality of input and output data connections among the plurality of heterogeneous computational elements for media transmission on a plurality of frequencies.

11. The apparatus of claim 1, wherein the interconnection network is further adapted to configure a third plurality of input and output data connections among the plurality of heterogeneous computational elements for media transmission in a plurality of time division multiple access (TDMA) time slots.

12. The apparatus of claim 1, further comprising:

a timing unit coupled to the network interface, to plurality of heterogeneous computational elements and to the interconnection network, the timing unit operative to provide synchronization and over sampling.

13. The apparatus of claim 12, wherein the timing unit is comprised of a plurality of heterogeneous computational elements and interconnection network.

14. The apparatus of claim 1, further comprising:

a memory coupled to the plurality of heterogeneous computational elements and to the interconnection network, the memory operative to store the first configuration information and the second configuration information.

15. The apparatus of claim 1, wherein the first configuration information and the second configuration information are stored in a second plurality of heterogeneous computational elements configured for a memory functional mode.

16. The apparatus of claim 1, wherein the first configuration information and the second configuration information are stored as a configuration of the plurality of heterogeneous computational elements.

17. The apparatus of claim 1, wherein the first fixed architecture and the second fixed architecture are selected from a plurality of specific architectures, the plurality of specific architectures including functions for memory, addition, multiplication, complex multiplication, subtraction, synchronization, queuing, over sampling, under sampling, adaptation, configuration, reconfiguration, control, input, output, and field programmability.

18. The apparatus of claim 1, further comprising:

a controller coupled to the plurality of heterogeneous computational elements and to the interconnection network, the controller operative to direct and schedule the configuration of the plurality of heterogeneous computational elements for the first functional mode and the reconfiguration of the plurality of heterogeneous computational elements for the second functional mode.

19. The apparatus of claim 1, further comprising:

a second plurality of heterogeneous computational elements coupled to the interconnection network, the second plurality of heterogeneous computational elements having a third plurality of input and output data connections configured by the interconnection network for a controller operating mode, the configured second plurality of heterogeneous computational elements operative to direct and schedule the configuration of the plurality of heterogeneous computational elements by the interconnection network for the first media functional mode and the second media functional mode.

20. The apparatus of claim 1, wherein apparatus is embodied within a mobile station having a plurality of operating modes.

21. The apparatus of claim 20, wherein the plurality of operating modes of the mobile station includes mobile telecommunication, personal digital assistance, multimedia reception, mobile packet-based communication, and paging.

22. The apparatus of claim 1, wherein a first portion of the plurality of heterogeneous computational elements are operating in the first media functional mode while a second portion

of the plurality of heterogeneous computational elements are being configured for the second media functional mode.

39. An adaptive integrated circuit, comprising:

a memory adapted to store configuration information;

a plurality of fixed and differing computational elements; and

an interconnection network coupled to the memory and to the plurality of fixed and differing computational elements, the interconnection network adapted, in response to configuration information, to configure a plurality of data input, data output and control communication paths among the plurality of fixed and differing computational elements for a plurality of media functional modes, the plurality of media functional modes comprising an acquisition mode and a traffic mode.

40. The adaptive integrated circuit of claim 39, wherein the plurality of media functional modes further comprises an idle mode.

41. The adaptive integrated circuit of claim 39, wherein the acquisition mode includes a channel acquisition mode and a control processing mode.

42. The adaptive integrated circuit of claim 39, wherein the traffic mode includes a voice reception mode, a voice transmission mode, and a control processing mode.

43. The adaptive integrated circuit of claim 39, wherein the traffic mode includes a data reception mode, a data transmission mode, a data processing mode, and a control processing mode.

44. The adaptive integrated circuit of claim 43, wherein the traffic mode includes a media reception mode, a media transmission mode, a media processing mode, and a control processing mode.

45. The adaptive integrated circuit of claim 43, wherein the control processing mode includes processing of a plurality of GSM control channels, the plurality of GSM control channels including a broadcast control channel (BCCH), a frequency-correction channel, a synchronization channel (SCH), a plurality of common control channels (CCCH), a slow associated control channels (SACCH), and a fast associated control channel (FACCH).

46. The adaptive integrated circuit of claim 39, wherein the interconnection network is further adapted to configure the plurality of data input, data output and control communication

paths among the plurality of fixed and differing computational elements for media reception on a plurality of frequencies.

47. The adaptive integrated circuit of claim 39, wherein the interconnection network is further adapted to configure the plurality of data input, data output and control communication paths among the plurality of fixed and differing computational elements for media reception in a plurality of time division multiple access (TDMA) time slots.

48. The adaptive integrated circuit of claim 39, wherein the interconnection network is further adapted to configure the plurality of data input, data output and control communication paths among the plurality of fixed and differing computational elements for media transmission on a plurality of frequencies.

49. The adaptive integrated circuit of claim 39, wherein the interconnection network is further adapted to configure the plurality of data input, data output and control communication paths among the plurality of fixed and differing computational elements for media transmission in a plurality of time division multiple access (TDMA) time slots.

50. The adaptive integrated circuit of claim 39, wherein adaptive integrated circuit is embodied within a mobile station having a plurality of operating modes.

51. The adaptive integrated circuit of claim 50, wherein the plurality of operating modes of the mobile station includes mobile telecommunication, personal digital assistance, multimedia reception, mobile packet-based communication, and paging.

52. The adaptive integrated circuit of claim 39, wherein a first portion of the plurality of fixed and differing computational elements are operating in the first media functional mode while a second portion of the plurality of fixed and differing computational elements are being configured for the second media functional mode.

53. The adaptive integrated circuit of claim 39, wherein the plurality of fixed and differing computational elements are selected from a plurality of specific architectures, the plurality of specific architectures including functions for memory, addition, multiplication, complex multiplication, subtraction, synchronization, queuing, over sampling, under sampling, adaptation, configuration, reconfiguration, control, input, output, and field programmability.

54. The apparatus of claim 1, wherein the interconnection network is further adapted to configure the first and second pluralities of input and output data connections among the

plurality of heterogeneous computational elements by providing circuit-switched connections for input and output data transfer.

55. The apparatus of claim 1, wherein the interconnection network is further adapted to configure the first and second pluralities of input and output data connections among the plurality of heterogeneous computational elements by providing routing of data packets for input and output data transfer.

56. The apparatus of claim 55, wherein the data packets further comprise routing information for self-routing of the data packets.

57. The apparatus of claim 1, wherein the interconnection network further comprises a plurality of levels of interconnection, a first level of interconnection of the plurality of levels of interconnection adapted to route a plurality of data packets as the configuration of the first and second pluralities of input and output data connections.

58. The apparatus of claim 57, wherein a second level of interconnection of the plurality of levels of interconnection is adapted to provide circuit-switched connections for input and output data transfer as the configuration of the first and second pluralities of input and output data connections.

59. The apparatus of claim 1, wherein the network interface is a wireless communication network interface.

60. A mobile communication apparatus for wireless communication within a wireless network, comprising:

a network interface for wireless communication with a base station transceiver;

a memory adapted to store configuration information;

a plurality of fixed and differing computational elements; and

an interconnection network coupled to the network interface, to the memory and to the plurality of fixed and differing computational elements, the interconnection network adapted, in response to configuration information, to configure a plurality of data input, data output and control communication paths among the plurality of fixed and differing computational elements for a plurality of media functional modes.

61. The apparatus of claim 60, wherein the plurality of media functional modes comprises an acquisition mode and a traffic mode.

62. The apparatus of claim 61, wherein the acquisition mode comprises a channel acquisition mode and a control processing mode.

63. The apparatus of claim 61, wherein the traffic mode comprises a voice reception mode, a voice transmission mode, and a control processing mode.

64. The apparatus of claim 61, wherein the traffic mode comprises a data reception mode, a data transmission mode, a data processing mode, and a control processing mode.

65. The apparatus of claim 64, wherein the control processing mode comprises processing of a plurality of GSM control channels, the plurality of GSM control channels comprising a broadcast control channel (BCCH), a frequency-correction channel, a synchronization channel (SCH), a plurality of common control channels (CCCH), a slow associated control channels (SACCH), and a fast associated control channel (FACCH).

66. The apparatus of claim 60, wherein the interconnection network is further adapted to configure the plurality of data input, data output and control communication paths among the plurality of heterogeneous computational elements by providing circuit-switched connections for corresponding transfer of data input, data output and control information.

67. The apparatus of claim 60, wherein the interconnection network is further adapted to configure the plurality of data input, data output and control communication paths among the plurality of heterogeneous computational elements by providing routing of data packets for corresponding transfer of data input, data output and control information.

EVIDENCE APPENDIX

EXHIBIT A

UNITED STATES PATENT AND TRADEMARK OFFICE

10/040
41807-2

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/040,100	01/04/2002	Paul L. Master	1030.024	8832

34756 7590 02/09/2007

GAMBURD LAW GROUP LLC
600 WEST JACKSON BLVD.
SUITE 625
CHICAGO, IL 60661

EXAMINER	
TRAN, NGHI V	
ART UNIT	PAPER NUMBER
2151	

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	02/09/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

OA. 006
final
2mo. 4/7

Office Action Summary	Application No.	Applicant(s)	
	10/040,100	MASTER ET AL.	
	Examiner	Art Unit	
	Nghi V. Tran	2151	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *05 November 2006*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-22 and 39-53* is/are pending in the application.

4a) Of the above claim(s) *23-38* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-22 and 39-53* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1. This office action is in response to the amendment filed on November 05, 2006. Claims 1-11, 19, 21, 39-43 and 46-49 have been amended. No claims have been canceled. Claims 54-67 have been added. Claims 23-38 have been withdrawn. Therefore, claims 1-22 and 39-67 are presented for further examination.

Double Patenting

2. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

3. Claims 1-22 and 39-67 of the instance application are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-50 of U.S. Patent No. 6,618,434. Although the conflicting claims are not identical, they are

not patentably distinct from each other because the limitation of claims 11-22 and 39-67 of the instance application is overlapping with the limitation of claims 1-50 of U.S. Patent No. 6,618,434 as following:

U.S. Patent No. 6,618,434	Instant Application No. 10/040,100
1. A multimode rake receiver, comprising:	1. An apparatus for adaptive multimedia transmission and reception, the apparatus comprising:
a network interface;	a network interface;
a plurality of adaptive multimode rake fingers coupled to the network interface, the plurality of adaptive multimode rake fingers comprising a first plurality of heterogeneous computational elements having at least two different fixed architectures, wherein the first plurality of heterogeneous computational elements are configurable to form the plurality of adaptive multimode rake fingers, the first plurality of heterogeneous computational elements are capable of responding to a first mode signal to configure for a first	a plurality of heterogeneous computational elements, a first computational element of the plurality of heterogeneous computational elements having a first fixed architecture and a second computational element of the plurality of heterogeneous computational elements having a second, different fixed architecture; and

functional mode for path reception, capable of responding to a second mode signal to configure for a second functional mode for searching, and capable of responding to a third mode signal to configure for a third functional mode; and	
a multimode processor coupled to the plurality of adaptive multimode rake fingers, the multimode processor capable of responding to the first mode signal to configure for the first functional mode for path reception, capable of responding to the second mode signal to configure for the second functional mode for searching, and further capable of responding to the third mode signal to configure for a third functional mode.	an interconnection network couple to the network interface and to the plurality of heterogeneous computational elements, the interconnection network adapted, in response to first configuration information, to *configure a first plurality of input and output data connections among the plurality of heterogeneous computational elements for a first media functional mode of a plurality of media functional modes*, and the interconnection network further adapted, in response to *second configuration information, to configure a second plurality of input and output data connections among the plurality of heterogeneous computational elements for*

	a second, different media functional mode of the plurality of media functional modes, the plurality of media functional modes comprising *an acquisition mode and a traffic mode.*

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. Claims 1-6, 8-11, 14-16, 20-22, 39-44, 46-52, and 59-64 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kovacs et al., U.S. Patent Application Publication No. 2001/0003191 (hereinafter Kovacs) in view of Eriksson et al., United States Patent Number 6,563,891 (hereinafter Eriksson).

6. With respect to claims 1, 39, and 60-61, Kovacs teaches an apparatus for adaptive multimedia transmission and reception [fig.1], the apparatus comprising:

- a network interface;

- a plurality of heterogeneous computational elements, a first computational element of the plurality of heterogeneous computational elements having a first fixed architecture and a second computational element of the plurality of heterogeneous computational elements having a second, different fixed architecture [paragraph 0036].

However, Kovacs does not explicitly show an interconnection network couple to the network interface and to the plurality of heterogeneous computational elements, the interconnection network adapted, in response to first configuration information, to configure a first plurality of input and output data connections among the plurality of heterogeneous computational elements for a first media functional mode of a plurality of media functional modes, and the interconnection network further adapted, in response to second configuration information, to configure a second plurality of input and output data connections among the plurality of heterogeneous computational elements for a second, different media functional mode of the plurality of media functional modes, the plurality of media functional modes comprising an acquisition mode and a traffic mode.

In a related art, Eriksson discloses or suggests an interconnection network couple to the network interface and to the plurality of heterogeneous computational elements, the interconnection network adapted, in response to first configuration information [col.4, ln.47 through col.5, ln.11], to configure a first plurality of input and output data [i.e. input and output signal, figs.4a&4b] connections among the plurality of heterogeneous computational elements for a first media functional mode [i.e. mode 1] of a plurality of media functional modes, and the interconnection network further adapted,

in response to second configuration information, to configure a second plurality of input and output data connections among the plurality of heterogeneous computational elements for a second, different media functional mode of the plurality of media functional modes, the plurality of media functional modes [i.e. a variety of modes such as mode 1, mode 2, mode 3, and mode 4, fig.8] comprising an acquisition mode [col.13, ln.20 through col.14, ln.42] and a traffic mode [col.8, ln.41 through col.9, ln.49] [fig.8].

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to modify Kovacs in view of Eriksson by configuring a first and second plurality of input and output data connections among the plurality of heterogenous computational elements for a second, different media functional mode of the plurality of media functional modes comprising a traffic mode and an acquisition mode because this feature can be optimized for different type of receive processing operation, e.g., traffic reception and measurement of other channels [Eriksson, see abstract]. It is for this reason that one of ordinary skill in the art at the time of the invention would have been motivated in order to allow power to be reduced while improving quality measures on an active call connection [Eriksson, col.3, lns.10-30].

7. With respect to claims 2 and 40, Kovacs does not explicitly show wherein the plurality of media functional modes include an idle mode.

In a communication system, Eriksson suggests wherein the plurality of media functional modes include an idle mode [col.6, lns.31-44].

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to modify Kovacs in view of Eriksson by including an idle mode because this feature can be optimized for different type of receive processing operation, e.g., traffic reception and measurement of other channels [Eriksson, see abstract]. It is for this reason that one of ordinary skill in the art at the time of the invention would have been motivated in order to allow power to be reduced while improving quality measures on an active call connection [Eriksson, col.3, lns.10-30].

8. With respect to claims 3, 41, and 62, Kovacs does not explicitly show wherein the acquisition mode includes a channel acquisition mode and a control processing mode.

In a communication system, Eriksson suggests wherein the acquisition mode includes a channel acquisition mode and a control processing mode [col.13, ln.20 through col.14, ln.42].

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to modify Kovacs in view of Eriksson by including a channel acquisition mode and a control processing mode because this feature can be optimized for different type of receive processing operation, e.g., traffic reception and measurement of other channels [Eriksson, see abstract]. It is for this reason that one of ordinary skill in the art at the time of the invention would have been motivated in order to allow power to be reduced while improving quality measures on an active call connection [Eriksson, col.3, lns.10-30].

9. With respect to claims 4-6, 42-44, and 63-64, Kovacs does not explicitly show wherein the traffic mode includes a voice reception mode, a voice transmission mode, and a control processing mode.

In a communication system, Eriksson suggests wherein the acquisition mode includes a channel acquisition mode and a control processing mode [col.6, lns.15-31 and fig.8].

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to modify Kovacs in view of Eriksson by including a voice reception mode, a voice transmission mode, and a control processing mode because this feature can be optimized for different type of receive processing operation, e.g., traffic reception and measurement of other channels [Eriksson, see abstract]. It is for this reason that one of ordinary skill in the art at the time of the invention would have been motivated in order to allow power to be reduced while improving quality measures on an active call connection [Eriksson, col.3, lns.10-30].

10. With respect to claims 8 and 46, Kovacs further teaches wherein the interconnection network is further operative to configure the plurality of heterogeneous computational elements for media reception on a plurality of frequencies [paragraphs 0036 and 0067].

11. With respect to claims 9, 11, 47 and 49, Kovacs does not explicitly show wherein the interconnection network is further operative to configure the plurality of

heterogeneous computational elements for media reception in a plurality of time division multiple access (TDMA) time slots.

In a communication system, Eriksson suggests wherein the interconnection network is further operative to configure the plurality of heterogeneous computational elements for media reception in a plurality of time division multiple access (TDMA) time slots [col.7, lns.6-65].

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to modify Kovacs in view of Eriksson by configuring the plurality of heterogeneous computational elements for media reception in a plurality of TDMA time slots because this feature can be optimized for different type of receive processing operation, e.g., traffic reception and measurement of other channels [Eriksson, see abstract]. It is for this reason that one of ordinary skill in the art at the time of the invention would have been motivated in order to allow power to be reduced while improving quality measures on an active call connection [Eriksson, col.3, lns.10-30].

12. With respect to claims 10 and 48, Kovacs further teaches wherein the interconnection network is further operative to configure the plurality of heterogeneous computational elements for media transmission on a plurality of frequencies [i.e. Bluethooth, IEEE 802.11, ... fig.1].

13. With respect to claims 14-16, Kovacs does not explicitly show a memory coupled to the plurality of heterogeneous computational elements and to the interconnection network, the memory operative to store the first configuration information and the second configuration information.

In a wireless communication system, Eriksson discloses a memory [i.e. memory **100**] coupled to the plurality of heterogeneous computational elements [i.e. different types of receive processing operations, see abstract] and to the interconnection network, the memory operative to store the first configuration information and the second configuration information [fig.8].

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to modify Kovacs in view Fishman by operating to store the first configuration information and the second configuration information because this feature can be optimized for different type of receive processing operation, e.g., traffic reception and measurement of other channels [Eriksson, see abstract]. It is for this reason that one of ordinary skill in the art at the time of the invention would have been motivated in order to allow power to be reduced while improving quality measures on an active call connection [Eriksson, col.3, lns.10-30].

14. With respect to claims 20 and 50, Kovacs further teaches wherein apparatus is embodied within a mobile station [i.e. base station **15**] having a plurality of operating modes [fig.1].

15. With respect to claim 21, Kovacs further teaches wherein the plurality of operating modes of the mobile station includes mobile telecommunication, personal digital assistance, multimedia reception, mobile packet-based communication, and paging [fig.1].

16. With respect to claim 51, Kovacs further teaches wherein the plurality of operating modes of the mobile station includes mobile telecommunication, personal digital assistance, multimedia reception, mobile packet-based communication, and paging [fig.1].

17. With respect to claims 22 and 52, Kovacs further teaches wherein a first portion of the plurality of heterogeneous computational elements are operating in the first media functional mode while a second portion of the plurality of heterogeneous computational elements are being configured for the second media functional mode [paragraph 0036].

18. Claims 7, 12-13, 17-19, 45, 53-58, and 65-67 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kovacs in view of Eriksson n as applied to claims 1, 39, and 60 above, and further in view of Jokinen et al., U.S. Patent Application Publication No. 2003/0026242 (hereinafter Jokinen).

19. With respect to claims 7, 17, 45, 53, and 65, Kovacs does not explicitly show wherein the control processing mode includes processing of a plurality of GSM control

channels, the plurality of GSM control channels including a broadcast control channel (BCCH), a frequency-correction channel, a synchronization channel (SCH), a plurality of common control channels (CCCH), a slow associated control channels (SACCH), and a fast associated control channel (FACCH).

In a communication system, Jokinen suggests wherein the control processing mode includes processing of a plurality of GSM control channels, the plurality of GSM control channels including a broadcast control channel (BCCH), a frequency-correction channel, a synchronization channel (SCH), a plurality of common control channels (CCCH), a slow associated control channels (SACCH), and a fast associated control channel (FACCH) [paragraphs 0057-0058 and 0006].

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to modify Kovacs in view of Eriksson, and further in view of Jokinen by including processing of a plurality of GSM control channels, the plurality of GSM control channels including a broadcast control channel (BCCH), a frequency-correction channel, a synchronization channel (SCH), a plurality of common control channels (CCCH), a slow associated control channels (SACCH), and a fast associated control channel (FACCH) because this feature will be transmitted on the hopping sequences of the other base stations [Jokinen, paragraph 0022]. It is for this reason that one of ordinary skill in the art at the time of the invention would have been motivated in order to use the information to make a handover decision [Jokinen, paragraph 0004].

20. With respect to claims 12-13, Kovacs does not explicitly a timing unit coupled to the network interface and the timing unit operative to provide synchronization and over sampling.

In a communication system, Jokinen suggests a timing unit coupled to the network interface and the timing unit operative to provide synchronization and over sampling [paragraphs 0033-0035].

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to modify Kovacs in view of Eriksson, and further in view of Jokinen by operating the timing unit to provide synchronization and over sampling because this feature will be transmitted on the hopping sequences of the other base stations [Jokinen, paragraph 0022]. It is for this reason that one of ordinary skill in the art at the time of the invention would have been motivated in order to use the information to make a handover decision [Jokinen, paragraph 0004].

21. With respect to claims 18-19, 54-58, and 66-67, Kovacs does not explicitly show the controller operative to direct and schedule the configuration of the plurality of heterogeneous computational elements for the first functional mode and the reconfiguration of the plurality of heterogeneous computational elements for the second functional mode.

In a communication system, Jokinen suggests the controller operative to direct and schedule the configuration of the plurality of heterogeneous computational elements for the first functional mode and the reconfiguration of the plurality of

heterogeneous computational elements for the second functional mode [paragraphs 0033-0035].

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to modify Kovacs in view of Eriksson, and further in view of Jokinen by scheduling the configuration of the plurality of heterogeneous computational elements for the first function mode because this feature will be transmitted on the hopping sequences of the other base stations [Jokinen, paragraph 0022]. It is for this reason that one of ordinary skill in the art at the time of the invention would have been motivated in order to use the information to make a handover decision [Jokinen, paragraph 0004].

Response to Arguments

22. Applicant's arguments with respect to claims 1-22 and 39-53 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

23. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within

TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

24. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Nghi V. Tran whose telephone number is (571) 272-4067. The examiner can normally be reached on Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Zarni Maung can be reached on (571) 272-3939. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Nghi Tran
Patent Examiner
Art Unit 2151

RUPAL DHARIA
SUPERVISORY PATENT EXAMINER

Notice of References Cited	Application/Control No. 10/040,100	Applicant(s)/Patent Under Reexamination MASTER ET AL.	
	Examiner Nghi V. Tran	Art Unit 2151	Page 1 of 1

U.S. PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Name	Classification
*	A	US-6,618,434	09-2003	Heidari-Bateni et al.	375/148
*	B	US-6,563,891	05-2003	Eriksson et al.	375/345
*	C	US-2001/0003191	06-2001	Kovacs et al.	709/226
*	D	US-6,411,612	06-2002	Halford et al.	370/347
	E	US-			
	F	US-			
	G	US-			
	H	US-			
	I	US-			
	J	US-			
	K	US-			
	L	US-			
	M	US-			

FOREIGN PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Country	Name	Classification
	N					
	O					
	P					
	Q					
	R					
	S					
	T					

NON-PATENT DOCUMENTS

*		Include as applicable: Author, Title Date, Publisher, Edition or Volume, Pertinent Pages)
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Dates in MM-YYYY format are publication dates. Classifications may be US or foreign.

EXHIBIT C

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Patent Application

Inventors: Paul L. Master et al. **Examiner:** Tran, Nghi V.

Serial No.: 10/040,100 **Group Art Unit:** 2151

Docket No.: 1130.024

Filed: January 4, 2002

Entitled: Apparatus and Method for Adaptive Multimedia Reception and Transmission in Communication Environments

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600 West Jackson Blvd., Suite 625
Chicago, IL 60661
November 5, 2006

REVISED AMENDMENT AND RESPONSE UNDER 37 CFR 1.111 AND 1.115

Mail Stop Amendment
Honorable Commissioner of
Patents and Trademarks
Alexandria, VA 22313-1450

Sir:

In response to the Notice of Non-Compliant Amendment mailed October 30, 2006, Applicants hereby respectfully submit the following Revised Amendment and Response, which includes the complete listing of all claims, including the withdrawn claims, and all corresponding status identifiers.

In the event of non-payment or improper payment of any required fee, the Commissioner is authorized to charge or to credit Deposit Account No. 501,262 as may be required to correct the error.

Amendments to the Claims are reflected in the listing of claims which begins on page 2 of this paper.

Remarks begin on page 12 of this paper.

AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application.

Please amend claims 1 – 11, 19, 21, 39 – 43, and 46 – 49, withdraw claims 23 – 38, and add new claims 54 – 67, as follows:

1 (Currently Amended). An apparatus for adaptive multimedia transmission and reception, the apparatus comprising:

a network interface;

a plurality of heterogeneous computational elements, ~~the plurality of heterogeneous computational elements including a first computational element and a second computational element, the~~ a first computational element of the plurality of heterogeneous computational elements having a first fixed architecture and a ~~the~~ second computational element of the plurality of heterogeneous computational elements having a second, different fixed architecture; and ~~architecture, the first fixed architecture being different than the second fixed architecture; and~~

an interconnection network coupled to the network interface and to the plurality of heterogeneous computational elements, the interconnection network adapted, in response to first configuration information, to configure a first plurality of input and output data connections among ~~operative to configure~~ the plurality of heterogeneous computational elements for a first media functional mode of a plurality of media functional modes, ~~in response to first configuration information,~~ and the interconnection network further adapted, in response to second configuration information, to configure a second plurality of input and output data connections among ~~operative to reconfigure~~ the plurality of heterogeneous computational elements for a second, different media functional mode of the plurality of media functional modes, the plurality of media functional modes comprising an acquisition mode and a traffic mode. ~~in response to second configuration information, the first media functional mode being different than the second media functional mode.~~

2 (Currently Amended). The apparatus of claim 1, wherein the plurality of media functional modes further comprises ~~include an acquisition mode, a traffic mode, and~~ an idle mode.

3 (Currently Amended). The apparatus of claim 1, ~~claim 2,~~ wherein the acquisition mode includes a channel acquisition mode and a control processing mode.

4 (Currently Amended). The apparatus of claim 1, ~~claim 2,~~ wherein the traffic mode includes a voice reception mode, a voice transmission mode, and a control processing mode.

5 (Currently Amended). The apparatus of claim 1, ~~claim 2,~~ wherein the traffic mode includes a data reception mode, a data transmission mode, a data processing mode, and a control processing mode.

6 (Currently Amended). The apparatus of claim 1, ~~claim 2,~~ wherein the traffic mode includes a media reception mode, a media transmission mode, a media processing mode, and a control processing mode.

7 (Currently Amended). The apparatus of claim 4, ~~claim 2,~~ wherein the control processing mode includes processing of a plurality of GSM control channels, the plurality of GSM control channels including a broadcast control channel (BCCH), a frequency-correction channel, a synchronization channel (SCH), a plurality of common control channels (CCCH), a slow associated control channels (SACCH), and a fast associated control channel (FACCH).

8 (Currently Amended). The apparatus of claim 1, wherein the interconnection network is further adapted to configure a third plurality of input and output data connections among ~~operative to configure~~ the plurality of heterogeneous computational elements for media reception on a plurality of frequencies.

9 (Currently Amended). The apparatus of claim 1, wherein the interconnection network is further adapted to configure a third plurality of input and output data connections among ~~operative to configure~~ the plurality of heterogeneous computational elements for media reception in a plurality of time division multiple access (TDMA) time slots.

10 (Currently Amended). The apparatus of claim 1, wherein the interconnection network is further adapted to configure a third plurality of input and output data connections among ~~operative to configure~~ the plurality of heterogeneous computational elements for media transmission on a plurality of frequencies.

11 (Currently Amended). The apparatus of claim 1, wherein the interconnection network is further adapted to configure a third plurality of input and output data connections among ~~operative to configure~~ the plurality of heterogeneous computational elements for media transmission in a plurality of time division multiple access (TDMA) time slots.

12 (Original). The apparatus of claim 1, further comprising:

a timing unit coupled to the network interface, to plurality of heterogeneous computational elements and to the interconnection network, the timing unit operative to provide synchronization and over sampling.

13 (Original). The apparatus of claim 12, wherein the timing unit is comprised of a plurality of heterogeneous computational elements and interconnection network.

14 (Original). The apparatus of claim 1, further comprising:

a memory coupled to the plurality of heterogeneous computational elements and to the interconnection network, the memory operative to store the first configuration information and the second configuration information.

15 (Original). The apparatus of claim 1, wherein the first configuration information and the second configuration information are stored in a second plurality of heterogeneous computational elements configured for a memory functional mode.

16 (Original). The apparatus of claim 1, wherein the first configuration information and the second configuration information are stored as a configuration of the plurality of heterogeneous computational elements.

17 (Original). The apparatus of claim 1, wherein the first fixed architecture and the second fixed architecture are selected from a plurality of specific architectures, the plurality of specific architectures including functions for memory, addition, multiplication, complex multiplication, subtraction, synchronization, queuing, over sampling, under sampling, adaptation, configuration, reconfiguration, control, input, output, and field programmability.

18 (Original). The apparatus of claim 1, further comprising:

a controller coupled to the plurality of heterogeneous computational elements and to the interconnection network, the controller operative to direct and schedule the configuration of the plurality of heterogeneous computational elements for the first functional mode and the reconfiguration of the plurality of heterogeneous computational elements for the second functional mode.

19 (Currently Amended). The apparatus of claim 1, further comprising:

a second plurality of heterogeneous computational elements coupled to the interconnection network, the second plurality of heterogeneous computational elements having a third plurality of input and output data connections configured by the interconnection network for a controller operating mode, the configured second plurality of heterogeneous computational elements operative to direct and schedule the configuration of the plurality of heterogeneous computational elements by the interconnection network for the first media functional mode and ~~the reconfiguration of the plurality of heterogeneous computational elements for~~ the second media functional mode.

20 (Original). The apparatus of claim 1, wherein apparatus is embodied within a mobile station having a plurality of operating modes.

21 (Currently Amended). The apparatus of claim 20, ~~claim 18,~~ wherein the plurality of operating modes of the mobile station includes mobile telecommunication, personal digital assistance, multimedia reception, mobile packet-based communication, and paging.

22 (Original). The apparatus of claim 1, wherein a first portion of the plurality of heterogeneous computational elements are operating in the first media functional mode while a second portion of the plurality of heterogeneous computational elements are being configured for the second media functional mode.

23 (Withdrawn). A method for adaptive multimedia transmission and reception, the method comprising:

determining matrix availability of a plurality of adaptive matrices to form a plurality of available adaptive matrices;

in response to first configuration information, configuring the plurality of available adaptive matrices for a first media functional mode of a plurality of media functional modes; and

in response to second configuration information, configuring the plurality of available adaptive matrices for a second media functional mode of the plurality of media functional modes, the first media functional mode being different than the second media functional mode.

24 (Withdrawn). The method of claim 23, wherein the plurality of media functional modes include an acquisition mode, a traffic mode, and an idle mode.

25 (Withdrawn). The method of claim 24, wherein the acquisition mode includes a channel acquisition mode and a control processing mode.

26 (Withdrawn). The method of claim 24, wherein the traffic mode includes a voice reception mode, a voice transmission mode, and a control processing mode.

27 (Withdrawn). The method of claim 24, wherein the traffic mode includes a data reception mode, a data transmission mode, a data processing mode, and a control processing mode.

28 (Withdrawn). The method of claim 24, wherein the traffic mode includes a media reception mode, a media transmission mode, a media processing mode, and a control processing mode.

29 (Withdrawn). The method of claim 24, wherein the control processing mode includes processing of a plurality of GSM control channels, the plurality of GSM control channels including a broadcast control channel (BCCH), a frequency-correction channel, a synchronization channel (SCH), a plurality of common control channels (CCCH), a slow associated control channels (SACCH), and a fast associated control channel (FACCH).

30 (Withdrawn). The method of claim 23, further comprising:

configuring the plurality of available adaptive matrices for media reception on a plurality of frequencies.

31 (Withdrawn). The method of claim 23, further comprising:

configuring the plurality of available adaptive matrices for media reception in a plurality of time division multiple access (TDMA) time slots.

32 (Withdrawn). The method of claim 23, further comprising:

configuring the plurality of available adaptive matrices for media transmission on a plurality of frequencies.

33 (Withdrawn). The method of claim 23, further comprising:

configuring the plurality of available adaptive matrices for media transmission in a plurality of time division multiple access (TDMA) time slots.

34 (Withdrawn). The method of claim 23, wherein the method is embodied within a mobile station having a plurality of operating modes.

35 (Withdrawn). The method of claim 34, wherein the plurality of operating modes of the mobile station includes mobile telecommunication, personal digital assistance, multimedia reception, mobile packet-based communication, and paging.

36 (Withdrawn). The method of claim 23, wherein a first portion of the plurality of available adaptive matrices are operating in the first media functional mode while a second portion of the plurality of available adaptive matrices are being configured for the second media functional mode.

37 (Withdrawn). The method of claim 23, further comprising:

configuring the plurality of available adaptive matrices for an idle mode.

38 (Withdrawn). The method of claim 23, further comprising:

configuring the plurality of available adaptive matrices for a timing mode, the timing mode providing synchronization and over sampling.

39 (Currently Amended). An adaptive integrated circuit, comprising:

a memory adapted to store configuration information;

a plurality of fixed and differing computational elements; and

an interconnection network coupled to the memory and to the plurality of fixed and differing computational elements, the interconnection network adapted, in response to configuration information, to configure a plurality of data input, data output and control communication paths among ~~operative in response to the configuration information to configure and reconfigure~~ the plurality of fixed and differing computational elements for a plurality of media functional modes, the plurality of media functional modes comprising an acquisition mode and a traffic mode. ~~modes.~~

40 (Currently Amended). The adaptive integrated circuit of claim 39, wherein the plurality of media functional modes further comprises ~~include an acquisition mode, a traffic mode, and~~ an idle mode.

41 (Currently Amended). The adaptive integrated circuit of claim 39, ~~claim 40,~~ wherein the acquisition mode includes a channel acquisition mode and a control processing mode.

42 (Currently Amended). The adaptive integrated circuit of claim 39, ~~claim 40,~~ wherein the traffic mode includes a voice reception mode, a voice transmission mode, and a control processing mode.

43 (Currently Amended). The adaptive integrated circuit of claim 39, claim 40, wherein the traffic mode includes a data reception mode, a data transmission mode, a data processing mode, and a control processing mode.

44 (Original). The adaptive integrated circuit of claim 43, wherein the traffic mode includes a media reception mode, a media transmission mode, a media processing mode, and a control processing mode.

45 (Original). The adaptive integrated circuit of claim 43, wherein the control processing mode includes processing of a plurality of GSM control channels, the plurality of GSM control channels including a broadcast control channel (BCCH), a frequency-correction channel, a synchronization channel (SCH), a plurality of common control channels (CCCH), a slow associated control channels (SACCH), and a fast associated control channel (FACCH).

46 (Currently Amended). The adaptive integrated circuit of claim 39, wherein the interconnection network is further adapted to configure the plurality of data input, data output and control communication paths among ~~operative to configure~~ the plurality of fixed and differing computational elements for media reception on a plurality of frequencies.

47 (Currently Amended). The adaptive integrated circuit of claim 39, wherein the interconnection network is further adapted to configure the plurality of data input, data output and control communication paths among ~~operative to configure~~ the plurality of fixed and differing computational elements for media reception in a plurality of time division multiple access (TDMA) time slots.

48 (Currently Amended). The adaptive integrated circuit of claim 39, wherein the interconnection network is further adapted to configure the plurality of data input, data output and control communication paths among ~~operative to configure~~ the plurality of fixed and differing computational elements for media transmission on a plurality of frequencies.

49 (Currently Amended). The adaptive integrated circuit of claim 39, wherein the interconnection network is further adapted to configure the plurality of data input, data output and control communication paths among ~~operative to configure~~ the plurality of fixed and differing computational elements for media transmission in a plurality of time division multiple access (TDMA) time slots.

50 (Original). The adaptive integrated circuit of claim 39, wherein adaptive integrated circuit is embodied within a mobile station having a plurality of operating modes.

51 (Original). The adaptive integrated circuit of claim 50, wherein the plurality of operating modes of the mobile station includes mobile telecommunication, personal digital assistance, multimedia reception, mobile packet-based communication, and paging.

52 (Original). The adaptive integrated circuit of claim 39, wherein a first portion of the plurality of fixed and differing computational elements are operating in the first media functional mode while a second portion of the plurality of fixed and differing computational elements are being configured for the second media functional mode.

53 (Original). The adaptive integrated circuit of claim 39, wherein the plurality of fixed and differing computational elements are selected from a plurality of specific architectures, the plurality of specific architectures including functions for memory, addition, multiplication, complex multiplication, subtraction, synchronization, queuing, over sampling, under sampling, adaptation, configuration, reconfiguration, control, input, output, and field programmability.

54 (New). The apparatus of claim 1, wherein the interconnection network is further adapted to configure the first and second pluralities of input and output data connections among the plurality of heterogeneous computational elements by providing circuit-switched connections for input and output data transfer.

55 (New). The apparatus of claim 1, wherein the interconnection network is further adapted to configure the first and second pluralities of input and output data connections among the plurality of heterogeneous computational elements by providing routing of data packets for input and output data transfer.

56 (New). The apparatus of claim 55, wherein the data packets further comprise routing information for self-routing of the data packets.

57 (New). The apparatus of claim 1, wherein the interconnection network further comprises a plurality of levels of interconnection, a first level of interconnection of the plurality of levels of interconnection adapted to route a plurality of data packets as the configuration of the first and second pluralities of input and output data connections.

58 (New). The apparatus of claim 57, wherein a second level of interconnection of the plurality of levels of interconnection is adapted to provide circuit-switched connections for input and output data transfer as the configuration of the first and second pluralities of input and output data connections.

59 (New). The apparatus of claim 1, wherein the network interface is a wireless communication network interface.

60 (New). A mobile communication apparatus for wireless communication within a wireless network, comprising:

a network interface for wireless communication with a base station transceiver;

a memory adapted to store configuration information;

a plurality of fixed and differing computational elements; and

an interconnection network coupled to the network interface, to the memory and to the plurality of fixed and differing computational elements, the interconnection network adapted, in response to configuration information, to configure a plurality of data input, data output and control communication paths among the plurality of fixed and differing computational elements for a plurality of media functional modes.

61 (New). The apparatus of claim 60, wherein the plurality of media functional modes comprises an acquisition mode and a traffic mode.

62 (New). The apparatus of claim 61, wherein the acquisition mode comprises a channel acquisition mode and a control processing mode.

63 (New). The apparatus of claim 61, wherein the traffic mode comprises a voice reception mode, a voice transmission mode, and a control processing mode.

64 (New). The apparatus of claim 61, wherein the traffic mode comprises a data reception mode, a data transmission mode, a data processing mode, and a control processing mode.

65 (New). The apparatus of claim 64, wherein the control processing mode comprises processing of a plurality of GSM control channels, the plurality of GSM control channels comprising a broadcast control channel (BCCH), a frequency-correction channel, a synchronization channel (SCH), a plurality of common control channels (CCCH), a slow associated control channels (SACCH), and a fast associated control channel (FACCH).

66 (New). The apparatus of claim 60, wherein the interconnection network is further adapted to configure the plurality of data input, data output and control communication paths among the plurality of heterogeneous computational elements by providing circuit-switched connections for corresponding transfer of data input, data output and control information.

67 (New). The apparatus of claim 60, wherein the interconnection network is further adapted to configure the plurality of data input, data output and control communication paths among the plurality of heterogeneous computational elements by providing routing of data packets for corresponding transfer of data input, data output and control information.

Remarks:

I. Status of the Application:

In the Office Action mailed April 20, 2006 (the "Office Action"), claims 1 – 22 and 39 – 53 were rejected under Section 103(a), in various combinations, as: (1) unpatentable over Kovacs et al., U.S. Patent Application Publication No. 2001/0003191 ("Kovacs" or the "Kovacs reference") in view of Fishman et al. U.S. Patent No. 6,871,236 ("Fishman" or the "Fishman reference") (Office Action, points 2 through 12); and (2) unpatentable over Kovacs in view of Fishman and further in view of Jokinen et al. U.S. Patent Application Publication No. 2003/0026242 ("Jokinen" or the "Jokinen reference") (Office Action, points 13 through 22).

Applicants affirm the previous claim election of Group I (claims 1 – 22 and 39 – 53), without traverse, and by entry of the foregoing Amendment, have withdrawn claims 23 – 38 from further consideration in this application. A Revised Amendment has been submitted which includes the listing of the withdrawn claims.

Upon entry of this amendment, Applicants have amended claims 1 – 11, 19, 21, 39 – 43, and 46 – 49, and added new claims 54 – 67. Each of the previous independent claims 1 and 39 have been amended, and new independent claim 60 has been added, to more distinctly claim the subject matter of the invention and further to delineate the differences between the claimed invention, the cited prior art, and the prior art cited in the related cases.

Claims 1 – 22, and 39 – 67 are pending in the application. Applicants respectfully traverse the rejection of claims 1 – 22 and 39 – 53 under Section 103. Applicants respectfully request reconsideration of the pending claims in view of the foregoing amendments and the following remarks.

II. New Claims 54 – 67 Are Supported in the Specification as Filed:

New claims 54 – 59 depend from claim 1, and relate to different methods for changing the input and output data paths, such as through circuit switching or data packet routing. Support for these new claims may be found throughout the specification, and more particularly at page 16, ll. 6 – 29; and page 14, ll. 20 – 25.

New independent claim 60 combines different aspects of the other two independent claims 1 and 39, and the corresponding dependent claims 61 – 67 are based upon the other dependent claims originally filed or having the same support in the specification as cited above, concerning circuit switching and data packet routing.

III. The Rejection of Claims 1 – 22 and 39 – 53 under Section 103 Should Be Withdrawn:

The present invention concerns devices for multimedia transmission and reception which, broadly speaking, utilize *configurable logic elements*. In this instance, independent claims 1, 39 and 60 are specifically directed to (a) fixed and differing computational elements which (b) are configured by an interconnection network. More specifically, as amended, different input and output data connections of the computational elements are provided by the interconnection network to create different functional modes for the device, such as an acquisition mode (e.g., for channel acquisition and control processing), and a traffic mode (*e.g.*, for voice traffic, data traffic, control processing, etc.). In addition, the computational elements themselves are fixed (rather than being formed from lower-level gates, such as in an FPGA), and are differing, that is, the plurality of computational elements includes different types of computational elements, such as multipliers, adders, shifters, and so on. In addition, independent claims 39 and 60 also claim that control paths, for control information, are also configured through the interconnection network, while independent claims 1 and 39 also claim that the plurality of functional modes includes both acquisition and traffic modes.

It is respectfully submitted that none of the cited references discloses the claimed elements of (1) use of such an interconnection network to (2) configure input and output data (and control) paths between and among (3) a plurality of fixed and differing computational elements to create (4) a plurality of media functional modes, such as the acquisition and traffic modes. These four claimed features of the present invention are not disclosed and are not suggested by the Kovacs, Fishman, and Jokinen references, alone or in combination with each other.

The Office Action admits (point 4) that the Kovacs reference does not disclose and does not suggest either an interconnection network or a plurality of fixed and differing computational elements (*i.e.*, heterogeneous computational elements). Rather,

the reference in Kovacs to "heterogeneous" does not refer to configurable logic elements, but refers to different types of communication networks (Kovaks, paragraph 36).

Indeed, the Kovacs reference is not directed to any type of configurable logic, let alone the configurable logic of the present invention which can be interconnected, in response to configuration information, for multiple communication modes. Instead, Kovacs is directed toward creating internetworking functionality among different types of devices, which may otherwise be incompatible with a given network. In Kovacs, then, different or variant protocol stacks are provided to users through an entry gateway server, and are downloaded as software. Kovacs does not address any hardware configuration. More specifically, Kovacs utilizes "protocol mapping managers" to download a protocol stack and to route messages between the different protocol stack implementations, to provide inter-working among different protocols (Kovacs, paragraph 92).

As a consequence, the Kovacs reference does not disclose and does not suggest any of the four claimed features of the present invention, namely (1) an interconnection network; (2) a plurality of fixed and differing computational elements; (3) configuration of input and output data (and control) paths among the computational elements; and (4) a plurality of media functional modes which can be implemented in the same hardware (*i.e.*, configured computational elements).

The Fishman reference concerns "content transformation", so that content may be customized for a selected device. The selected content is transformed at a mobile gateway, using a "content transform", with a transform identifier assigned to a mobile client, and then downloaded to the particular device. The transform identifier, with a content request, "allows the cache to return content that has been customized based on the operating characteristics of the mobile client" (Fishman, col. 3, l. 65 – col. 4, l. 2).

While both the Kovacs and Fishman references involve information downloadable from a (mobile) network, neither reference discloses or suggests a hardware "interconnection" network which can configure the input and output data paths of computational elements. The cited portion of Fishman (Office Action, point 4, citing Fishman Cols. 9 and 10), only discloses using transforms to customize control or configuration information for individual mobile clients, such as the unique identifiers to

differentiate among all the mobile telephones, and does not pertain to any type of configuration information which would control an interconnection network to configure the input and output data paths of computational elements. The Fishman reference, then, also does not disclose and does not suggest any of the four claimed features of the present invention discussed above. Simple, neither reference discloses or suggests anything concerning how to configure the physical, input-output connections among configurable logic elements to achieve different functional modes of a device, such as for channel acquisition or data transmission.

Lastly, the Jokinen reference also does not disclose and does not suggest these claimed elements of the present invention. The Jokinen reference is confined to methods for identifying base stations in a TDMA cellular network and has nothing to do with adaptive or configurable hardware. More particularly, Jokinen does not disclose and does not suggest the claimed elements of (1) use of an interconnection network to (2) configure input and output data (and control) paths between and among (3) a plurality of fixed and differing computational elements to create (4) a plurality of media functional modes, such as the acquisition and traffic modes.[1]

As a consequence, the Kovacs, Fishman, and Jokinen references, alone or in combination with each other, do not disclose and do not suggest these claimed features of the present invention. In addition, there is no motivation to combine these references. The mere fact that the references could be combined or modified does not render the resultant combination obvious unless the prior art also suggests the desirability of the combination. *In re Mills*, 916 F.2d 680 (Fed. Cir. 1990). In addition, identification of any individual part claimed is insufficient to defeat patentability of the whole claimed

[1] Two related, commonly-owned and co-invented applications are cited in the present application, now U.S. Patent No. 6,836,839, and U.S. Patent Application Serial No. 09/997,530. Those applications do not pertain to configuration for a plurality of media functional modes, such as the acquisition and traffic modes of the present invention. A considerable number of references have been cited by the USPTO and by applicants in these cases, including references from European examinations. Those references also include the references cited in yet a third related and commonly-owned application, now U.S. Patent No. 6,618,434. In the interests of brevity, the discussions of those references will not be repeated here, and may be found in the corresponding file histories of the related cases.

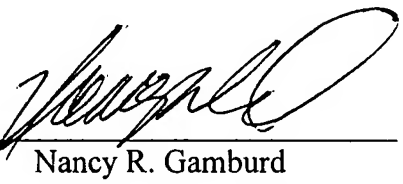
invention. See *In re Kotzab*, 217 F.3d 1365 (Fed. Cir. 2000). Accordingly, no *prima facie* showing of potential anticipation or obviousness has been made, and any assertions to the contrary have been clearly rebutted. *In re Rouffet*, 149 F.3d 1350 (Fed. Cir. 1998); *In re Mills*, 916 F.2d 680 (Fed. Cir. 1990). The rejection of independent claims 1 and 39 as obvious under Section 103, therefore, should be withdrawn. In addition, for the same reasons, new independent claim 60 is also allowable over the cited references.

The present invention, therefore, is not rendered obvious by these references under Section 103, and the rejection of the pending claims should be withdrawn. In addition, because the remaining dependent claims incorporate by reference all of the limitations of the corresponding independent claims, all of the dependent claims are also allowable over the cited references.

The Applicant respectfully submits that the present claims are in condition for allowance. On the basis of the above amendments and remarks, reconsideration and allowance of the application is believed to be warranted, and an early action toward that end is respectfully solicited. In addition, for any issues or concerns, the Examiner is invited to call the attorney for the applicant at the telephone number provided below.

Respectfully submitted,
Paul L. Master et al.

November 5, 2006

By 

Nancy R. Gamburd
Attorney for Applicants
Registration No. 38,147
Phone: 312-876-0460
Fax: 312-276-4176

CERTIFICATE OF FACSIMILE TRANSMISSION

I hereby certify that the foregoing Revised Amendment And Response (20 pages), and Transmittal (PTO/SB/21) (1 page), (21 total pages), for Paul L. Master et al., Serial No. 10/040,100, entitled "Apparatus and Method for Adaptive Multimedia Reception and Transmission in Communication Environments", have been transmitted by facsimile to the US Patent and Trademark Office to fax number (571) 273-8300 (Centralized Facsimile Number), on November 5, 2006.

Nancy R. Gamburd
Reg. No. 38,147

EXHIBIT D

NOTICE OF APPEAL FROM THE EXAMINER TO THE BOARD OF PATENT APPEALS AND INTERFERENCES	Docket Number (Optional) 046301-023000

	In re Application of: Master et al.	
	Application Number: 10/135,905	Filed: April 29, 2002
	For: STORAGE AND DELIVERY OF DEVICE FEATURES	
	Art Unit: 2616	Examiner: Vu Thong H.

Applicant hereby **appeals** to the Board of Patent Appeals and Interferences from the last decision of the examiner.

The fee for this Notice of Appeal is (37 CFR 41.20(b)(1)) $ 250.00

[ ] Applicant claims small entity status. See 37 CFR 1.27. Therefore, the fee shown above is reduced by half, and the resulting fee is: $ _____

[X] A check in the amount of the fee is enclosed.

[ ] Payment by credit card. Form PTO-2038 is attached.

[ ] The Director has already been authorized to charge fees in this application to a Deposit Account. I have enclosed a duplicate copy of this sheet.

[X] The Director is hereby authorized to charge any fees which may be required, or credit any overpayment to Deposit Account No. 501,262 . I have enclosed a duplicate copy of this sheet.

[X] A petition for an extension of time under 37 CFR 1.136(a) (PTO/SB/22) is enclosed.

I am the

[ ] applicant /inventor.

[ ] assignee of record of the entire interest. See 37 CFR 3.71. Statement under 37 CFR 3.73(b) is enclosed. (Form PTO/SB/96)

[X] attorney or agent of record.
Registration number 36,028

[ ] attorney or agent acting under 37 CFR 1.34.
Registration number if acting under 37 CFR 1.34. _____

_____
Signature

Wayne L. Tang
Typed or printed name

(312) 425-3900
Telephone number

May 8, 2007
Date

NOTE: Signatures of all the inventors or assignees of record of the entire interest or their representative(s) are required. Submit multiple forms if more than one signature is required, see below*.

[X] *Total of 1 forms are submitted.

I hereby certify that this correspondence is being deposited with the U.S. Postal Service with sufficient postage as First Class Mail, in an envelope addressed to: Mail Stop Amendments, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450, on the date shown below.

Dated: May 8, 2007 Signature: _____ (Christine Pisarski)

NOTICE OF APPEAL FROM THE EXAMINER TO THE BOARD OF PATENT APPEALS AND INTERFERENCES	Docket Number (Optional) 046301-006000

	In re Application of Master et al.	
	Application Number 10/040,100	Filed January 4, 2002
	For APPARATUS AND METHOD FOR ADAPTIVE MULTIMEDIA RECEPTION AND TRANSMISSION IN COMMUNICATION ENVIRONMENTS	
	Art Unit 2151	Examiner Nghi V. Tran

Applicant hereby **appeals** to the Board of Patent Appeals and Interferences from the last decision of the examiner.

The fee for this Notice of Appeal is (37 CFR 41.20(b)(1)) $ 250.00

[ ] Applicant claims small entity status. See 37 CFR 1.27. Therefore, the fee shown above is reduced by half, and the resulting fee is: $ _____

[X] A check in the amount of the fee is enclosed.

[ ] Payment by credit card. Form PTO-2038 is attached.

[ ] The Director has already been authorized to charge fees in this application to a Deposit Account. I have enclosed a duplicate copy of this sheet.

[X] The Director is hereby authorized to charge any fees which may be required, or credit any overpayment to Deposit Account No. 501,262 . I have enclosed a duplicate copy of this sheet.

[ ] A petition for an extension of time under 37 CFR 1.136(a) (PTO/SB/22) is enclosed.

I am the

[ ] applicant /inventor.

[ ] assignee of record of the entire interest. See 37 CFR 3.71. Statement under 37 CFR 3.73(b) is enclosed. (Form PTO/SB/96)

[X] attorney or agent of record.
Registration number 36,028

[ ] attorney or agent acting under 37 CFR 1.34.
Registration number if acting under 37 CFR 1.34. _____

Signature

Wayne L. Tang
Typed or printed name

(312) 425-3900
Telephone number

May 8, 2007
Date

NOTE: Signatures of all the inventors or assignees of record of the entire interest or their representative(s) are required. Submit multiple forms if more than one signature is required, see below*.

[X] *Total of 1 forms are submitted.

I hereby certify that this correspondence is being deposited with the U.S. Postal Service with sufficient postage as First Class Mail, in an envelope addressed to: Mail Stop AF, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450, on the date shown below.

Dated: May 8, 2007 Signature: _____ (Christine Pisarski)

EXHIBIT E

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Application No.	:	10/040,100
Applicants	:	Paul L. Master *et al.*
Filed	:	January 4, 2002
Title	:	APPARATUS AND METHOD FOR ADAPTIVE MULTIMEDIA RECEPTION AND TRANSMISSION IN COMMUNICATION ENVIRONMENTS
TC/A.U.	:	2151
Examiner	:	Nghi V. Tran
Docket No.	:	046301-006000

Certificate of Mailing

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Signature: _____
Christine Pisarski

Commissioner for Patents
Mail Stop Amendment
P.O. Box 1450
Alexandria, VA 22313-1450

INTERVIEW SUMMARY PURSUANT TO 37 C.F.R. § 1.133(b)

Dear Sir:

This is a summary of the Interview conducted between the undersigned and Examiner Tran on May 1, 2007. No exhibits or demonstrations were conducted. Pending claim 1 was discussed along with U.S. Publication No. 2001/0003191 ("Kovacs") and U.S. Patent No. 5,583,891 ("Eriksson") cited in the Final Office Action. Examiner Tran clarified that Eriksson was being applied to show the teaching of an "an acquisition mode and a traffic mode." The undersigned argued that neither reference included an interconnection network that configured data input and output connections between heterogeneous computing elements in the apparatus. Examiner Tran acknowledged that neither reference discloses such an interconnection network within the device. Examiner Tran agreed to consult with his supervisor to determine whether to allow the case and thus no agreement was reached with respect to allowing the case.

Respectfully Submitted,

Date: June 7, 2007

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Attorney for Applicants

EXHIBIT F